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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/718,779 | 11/20/2003 | Muhammad Chishti | 018563-004820US | 1523 |

20350 7590 11/30/2004

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| EXAMINER |
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WILSON, JOHN J

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| ART UNIT | PAPER NUMBER |
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3732

DATE MAILED: 11/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/718,779

Applicant(s)

CHISHTI ET AL.

Examiner

John J. Wilson

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-135 is/are pending in the application.
- 4a) Of the above claim(s) See Continuation Sheet is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8-19, 21, 27-49, 51-53, 57-64, 66-68, 72-77, 83, 87, 88, 90-123 and 133-135 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/23/04, 9/20/04.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Continuation of Disposition of Claims: Claims withdrawn from consideration are 6,7,20,22-26,50,54-56,65,69-71,78-82,84-86,89 and 124-132.

DETAILED ACTION

Applicant's election dated September 30, 2004 of the Group I invention, claims 1-77, 80-123 and 133-135, and further of the species of user input to select or change the interface, claims 21, 35-38, 42, 60, 75, 83, 92 and 115 in Paper No. 15 is acknowledged. Because applicant did not argue the restriction requirement, the election is without traverse.

Claims 6, 7, 20, 22-26, 50, 54-56, 65, 69-71, 80-82, 84-86 and 89 stand withdrawn from further consideration as being drawn to non-elected species.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 63, 64, 68, 72, 74-76, and 121-123 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andreiko et al (5454717) and Yoshii (4504225). Andreiko shows a system including an input component 30a, Fig. 1, path generating component, the show calculating ability of the computer 30b, 30c is inherently capable of functioning to generate a path, and means 40 for generating appliances. Andreiko does not show means for generating appliances that have cavities. Yoshii shows a component 9, Fig. 9c for generating appliances with cavities. It would be obvious to one of ordinary skill in the art to modify Andreiko to include a component for generating appliances with cavities as shown by Yoshii in order to generate the desired type of appliances. In a claimed computer system having structure and software, the

functional use of the software would be given weight, however, these claims are merely to a "system", and as such, the structural components applied above properly meet the claim language.

Claim 66 is rejected under 35 U.S.C. 103(a) as being unpatentable over Andreiko et al (5454717) in view of Yoshii (4504225) as applied to claim 63 above, and further in view of Wu et al (5338198). Andreiko does not show using volume image data. Wu shows using volume image data to form 3D images, column 6, lines 23-31. It would be obvious to one of ordinary skill in the art to modify Andreiko to include the use of volume image data as shown by Wu in order to obtain a better image.

Claim 67 is rejected under 35 U.S.C. 103(a) as being unpatentable over Andreiko et al (5454717) in view of Yoshii (4504225) as applied to claim 63 above, and further in view of Lemchen et al (RE 35169). Andreiko does not show segmenting the dentition. Lemchen shows generating a mathematical model of individual teeth, column 12, lines 26-29. It would be obvious to one of ordinary skill in the art to modify Andreiko to include segmenting the dentition as shown by Lemchen in order to better show and analyze the data.

Claim 73 is rejected under 35 U.S.C. 103(a) as being unpatentable over Andreiko et al (5454717) in view of Yoshii (4504225) and Schmitt et al (5823778) as applied to claim 72 above, and further in view of Robertson (5340309). The above combination does not show using animation. Robertson teaches animation, column 7, lines 63-69 and column 8, lines 1-28. It

would be obvious to one of ordinary skill in the art to modify the above combination to include animation as shown by Robertson in order to better display the teeth.

Claim 77 is rejected under 35 U.S.C. 103(a) as being unpatentable over Andreiko et al (5454717) in view of Yoshii (4504225) as applied to claim 76 above, and further in view of Sachdeva et al (6350120). Andreiko does not show digital appliances. Sachdeva teaches using digital brackets, column 7, line 5. It would be obvious to one of ordinary skill in the art to modify Andreiko to include using digital appliances as shown by Sachdeva in order to better model the complete system together.

Claim 135 is rejected under 35 U.S.C. 103(a) as being unpatentable over Andreiko et al (5454717) in view of Yoshii (4504225) as applied to claim 1 above, and further in view of Robertson (5340309). Andreiko shows receiving initial data, Figs. 2G-2I, scanning, column 5, lines 17-20 and intermediate calculations, column 25, lines 60-67 and column 26, lines 1-45. That these calculations will produce intermediate positions toward the final positions is an obvious matter of choice in the terminology used to describe the data produced by these calculations. Andreiko teaches using a display, however, Andreiko does not show using animation. Robertson teaches animation, column 7, lines 63-69 and column 8, lines 1-28. It would be obvious to one of ordinary skill in the art to modify Andreiko to include animation as shown by Robertson in order to better display the teeth.

Double Patenting

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The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-5, 8-19, 21, 27-49, 51-53, 57-64, 66-68, 72-77, 87, 88, 90-123 and 133-135 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-29 of U.S. Patent No. 5,975,893 in view of Andreiko et al (5454717). The claims of the '893 patent do not claim using a computer to determine and generate the desired appliances. Andreiko teaches that it is known to use a computer to generate appliances. It would be obvious to one of ordinary skill in the art to modify the claims of the '893 patent to include the use of a computer as shown by Andreiko in order to better make the appliances as desired.

Claims 1-5, 8-19, 21, 27-49, 51-53, 57-64, 66-68, 72-77, 87, 88, 90-123 and 133-135 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-26 of U.S. Patent No. 6,217,325. It would have been obvious to one of ordinary skill in the art to not include manipulating a visual image.

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Claims 1-5, 8-19, 21, 27-49, 51-53, 57-64, 66-68, 72-77, 87, 88, 90-123 and 133-135 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-50 of U.S. Patent No. 6,318,994. It would have been obvious to one of ordinary skill in the art to not include using constraints.

Claims 1-5, 8-19, 21, 27-49, 51-53, 57-64, 66-68, 72-77, 87, 88, 90-123 and 133-135 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-48 of U.S. Patent No. 6,450,807. It would have been obvious to one of ordinary skill in the art to not include not generating a masticatory system.

Claim Objections

In claim 80, line 9, --of—should follow “plurality”.

Allowable Subject Matter

Claims 1-5, 8-19, 21, 27-49, 51-53, 57-53, 57-62, 87, 88, 90-120 and 133 stand rejected under double patenting only.

If applicant overcome the double patenting rejection, the these claims would be allowed, further, dependent non-elected species claims 6, 7, 20, 22-26, 50, 54-56 and 89 would be rejoined and also allowed. Non-elected species claims 80-82 which contain similar limitations as the allowable claims would also be rejoined and allowed.

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If applicant also overcomes the art rejections of claims 63, 64, 66-68, 72-77 and 121-123 by adding a specific reference to a computer system for the digital data, then these claims along with rejoined claims 65 and 69-71 would be allowed.

Assuming that all of the above rejections are overcome, the remaining independent non-elected species claims 83-86 as well as the non-elected invention claims 78, 79 and 124-132 would remain withdrawn, and because the election was without traverse, these claims would be canceled by the examiner so that the application can be passed to issue.

Note that no indication of allowable subject matter with respect to claim 135 is made.

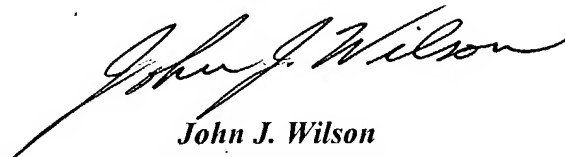
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Wilson whose telephone number is 571-273-4722. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin P. Shaver, can be reached at 571-273-4720. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John J. Wilson
Primary Examiner
Art Unit 3732

jjw

November 11, 2004